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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE TRADEMARK TRIAL AND APPEAL BOARD

Proceeding	91184197
Party	Defendant POWERTECH INDUSTRIAL CO., LTD.
Correspondence Address	MORTON J. ROSENBERG ROSENBERG, KLEIN AND LEE 3458 ELLICOTT CENTER DR STE 101 ELLICOTT CITY, MD 21043-4178 RKL@RKLPATLAW.COM
Submission	Answer
Filer's Name	MORTON J. ROSENBERG
Filer's e-mail	RKL@RKLPATLAW.COM
Signature	/MORTON J. ROSENBERG/
Date	06/24/2008
Attachments	2349-1569-OPP-ANSWERTOOPPOSITION-JUN24-2008.pdf (65 pages)(3461630 bytes)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE TRADEMARK TRIAL AND APPEAL BOARD

UNITED PARCEL SERVICE OF AMERICA, INC.,	:
Opposer,	: Opposition No. 91184197
v.	: Serial No. 77/176,134
POWERTECH INDUSTRIAL CO., LTD.,	:
Applicant	:

APPLICANT'S ANSWER TO NOTICE OF OPPOSITION

Applicant, Powertech Industrial Co., Ltd., by the undersigned attorney, hereby answers each of the allegations in the Notice of Opposition made by Opposer.

(1) Applicant is without knowledge or information to form a belief as to the allegations of the Opposer in Paragraph 1 of the Notice of Opposition and therefore denies same.

(2) Applicant is without knowledge or information to form a belief as to the allegations of the Opposer in Paragraph 2 of the Notice of Opposition and therefore denies same.

(3) Applicant is without knowledge or information to form a belief as to the allegations of the Opposer in Paragraph 3 of the Notice of Opposition and therefore denies same.

(4) Applicant admits in part and denies in part the allegations made in Paragraph 4 of the Notice of Opposition. Applicant admits that a search of the

website of the U.S. Patent and Trademark Office lists Registration Nos. 514,285 (Exhibit A attached); 966,774 (Exhibit B attached); 1,277,400 (Exhibit C attached); 1,375,109 (Exhibit D attached); 1,460,348 (Exhibit E attached); 1,874,248 (Exhibit F attached); 1,876,943 (Exhibit G attached); 1,878,016 (Exhibit H attached); 1,878,918 (Exhibit I attached); 2,098,168 (Exhibit J attached); 2,128,739 (Exhibit K attached); 2,278,090 (Exhibit L attached); 2,582,489 (Exhibit M attached); 2,830,249 (Exhibit N attached); 2,483,193 (Exhibit O attached); 3,160,062 (Exhibit P attached); 2,520,558 (Exhibit Q attached); and 2,973,108 (Exhibit R attached) as being registered by United Parcel Service of America, Inc., however, Applicant is without knowledge or information as to the current state of ownership of these Registrations and therefore denies same. Additionally, Applicant is without knowledge or information to form a belief as to the present validity and status of these listed Trademark Registrations and therefore denies same.

(5) Applicant is without knowledge or information to form a belief as to the allegations of the Opposer in Paragraph 5 of the Notice of Opposition and therefore denies same.

(6) Applicant is without knowledge or information to form a belief as to the allegation of the Opposer in Paragraph 6 of the Notice of Opposition and therefore denies same.

(7) Applicant is without knowledge as to the "information and belief" of the Opposer with relation to other parties using the Federal Registered Marks

complained of that are the same or substantially similar to Opposer's marks for the same or substantially similar services and therefore denies the allegations made in Paragraph 7 of the Notice of Opposition and leaves the Opposer to its proofs.

(8) Applicant admits the allegations alleged in Paragraph 8 of the Notice of Opposition.

(9) Applicant has found no other mark in use for Applicant's goods directed to Applicant's mark "HYBRID GREEN UPS" and based upon the constructive use of the mark with respect to Applicant's filing date before the U.S. Patent and Trademark Office of 9 May 2007, denies the allegations in Paragraph 9 of the Notice of Opposition.

(10) Applicant is without knowledge or information to form a belief as the allegations of the Opposer in Paragraph 10 of the Notice of Opposition and therefore denies same.

(11) Applicant is without knowledge or information to form a belief as to the allegations of the Opposer in Paragraph 11 of the Notice of Opposition and therefore denies same.

(12) Applicant denies the allegations made by the Opposer in Paragraph 12 of the Notice of Opposition.

(13) Applicant denies the allegations made by the Opposer in Paragraph 13 of the Notice of Opposition.

(14) Applicant denies the allegations made by the Opposer in Paragraph 14 of the Notice of Opposition.

(15) Applicant is without knowledge or information to form a belief as to the allegations of the Opposer in Paragraph 15 of the Notice of Opposition with regard to Opposer's allegation that the UPS mark is "famous", and therefore denies same. Applicant denies the allegations made in Paragraph 15 of the Notice of Opposition with respect to Opposer's allegation that Applicant's goods would cause dilution of the quality of Opposer's UPS mark.

(16) Applicant is without knowledge or information to form a belief as to the allegations of the Opposer in Paragraph 16 of the Notice of Opposition and therefore denies same.

(17) Applicant admits in part and denies in part the allegations made in Paragraph 17 of the Notice of Opposition. Applicant admits that Applicant's application, Serial No. 77/176,134, was filed on 9 May 2007. Applicant is without knowledge or information to form a belief as to the allegations of the Opposer in Paragraph 17 of the Notice of Opposition relating to Opposer's statement that Applicant's application would be subject to the provisions of Section 13 and 43(c) of the Lanham Act, as amended, and therefore denies same.

(18) Applicant denies the allegations made in Paragraph 18 of the Notice of Opposition.

(19) Applicant admits in part and denies in part the allegations made in Paragraph 19 of the Notice of Opposition. Applicant admits that Applicant's registration of Applicant's mark would constitute *prima facie* evidence of Applicant's exclusive right to use Applicant's designation for and in connection

with Applicant's goods. Applicant denies Opposer's allegation that Opposer will be damaged by the registration sought by Applicant in Paragraph 19 of the Notice of Opposition. Applicant denies that Applicant's registration of Applicant's application would be inconsistent and detrimental to Opposer's alleged prior, established and superior rights in the UPS mark.

FURTHER DEFENSES

(20) Applicant, in the following paragraph provides the TTAB some defenses which respond to Opposer's allegations made in the Notice of Opposition. Applicant reserves the right to develop further defenses during the Discovery Phase of the Opposition.

(21) Applicant filed the subject trademark application, Serial No. 77/176,134 in the U.S. Patent and Trademark Office on 9 May 2007. The subject trademark application was filed in International Class 9 for "power supplies; mobile phone chargers; mobile phone charger stations; battery chargers; UPS power supplies; power saving adapters; power source storages; uninterruptible power supplies (UPS); AC/DC converters; power source stable adapters".

It was clear from the Identification of the Goods that the "UPS" referred to uninterruptible power supplies (also commonly referred to uninterruptible power supplies).

In an interview held with the Trademark Examining Attorney, the Trademark Examining Attorney indicated that Applicant is required to disclaim the "UPS" apart from the mark as shown which was agreed to by Applicant.

In the Official Action dated 23 August 2007, the Trademark Examining Attorney at the U.S. Patent and Trademark Office suggested the Identified of the Goods to read: "power supplies; mobile phone battery chargers; mobile phone battery charger stations; battery chargers; universal power supplies;

power saving adapters; electric storage batteries; uninterruptible power supplies; AC/DC converters; power source stable adapters."

Applicant agreed to the suggested wording by the Trademark Examining Attorney of the U.S. Patent and Trademark Office and the application was published.

The Trademark Examining Attorney indicated that after a search of the Office Records, that there was no similar registered or pending mark which would bar registration under Trademark Act Section 2(d). Thus, the subject trademark application, after having been searched by the Trademark Examining Attorney, was found to be suitable for registration and not confusingly similar to any registered or pending mark at that time.

(22) Opposer has apparently filed the Notice of Opposition based upon Registration No. 514,285 (Exhibit A); Registration No. 966,774 (Exhibit B); Registration No. 1,277,400 (Exhibit C); Registration No. 1,375,109 (Exhibit D); Registration No. 1,460,348 (Exhibit E); Registration No. 1,874,248 (Exhibit F); Registration No. 1,876,943 (Exhibit G); Registration No. 1,878,016 (Exhibit H); and Registration No. 1,878,918 (Exhibit I), all directed to marks using the letters "UPS" for various transportation and delivery services.

Additionally, the Opposition was apparently further brought based upon Registration No. 2,098,168 (Exhibit J); Registration No. 2,128,739 (Exhibit K); Registration No. 2,278,090 (Exhibit L); Registration No. 2,582,489 (Exhibit M); Registration No. 2,830,249 (Exhibit N); Registration No. 2,483,193 (Exhibit

O); Registration No. 3,160,062 (Exhibit P); Registration No. 2,520,558 (Exhibit Q); and Registration No. 2,973,108 (Exhibit R) which have been registered in at least International Class 9.

The goods associated with the Registrations in International Class 9 are generally directed to computer programs, software and hardware for the printing of shipping documents and invoices as well as tracking the shipped packaged and delivery of personal property.

(23) Applicant's mark is "HYBRID GREEN UPS" and is directed to the entire word mark. A basic and fundamental principle of trademark law is that marks must be compared in their entireties and not dissected. When articulating reasons for reaching a conclusion on the issue of confusion, there may be nothing improper in stating the more or less weight has been given to a particular feature of the mark, however, the ultimate conclusion must rest in the consideration of the marks in their entireties. See *In re National Data Corp.*, 753 Fed. 2d 1056 (Fed. Cir. 1985).

(24) When taken in its entirety, Applicant's mark creates an entirely different commercial and visual impression than Opposer's marks. When making a side-by-side comparison between the marks at issue, it is believed that the visual impression of Applicant's mark and Opposer's Registrations are completely different in appearance and thus, there would be no cause for confusion, or even a determination of similarity between the marks.

In none of the marks cited by the Opposer, is the terminology "GREEN HYBRID" noted or any similar combination of words are seen.

(25) Applicant's mark and Opposer's marks all include the letters "UPS" and Applicant submits that the common portion of the marks at issue, namely, "UPS", is a commonly used acronym standing for "uninterruptible power system" and "universal power supply". This commonly used acronym is used by many third party registrants and further, by numerous parties in the field of power supplies.

A brief check on the internet of "www.acronymfinder.com" (Exhibit S) clearly shows that the letters "UPS" is used descriptively for uninterrupted power sources and uninterrupted power supplies. This terminology of "UPS" has clearly become descriptive in the power supply channels of trade.

Numerous articles relating to power supply systems commonly use the letters "UPS" for such uninterruptible power supplies or universal power supplies as is clearly seen in an article in Wikipedia (Exhibit T). This article, one of many, relates to "UPS technologies" and shows that the letters "UPS" are commonly understood among those in the power supply channels of trade to represent universal power supply or uninterrupted power supply.

A further search on the internet provides for the definition of UPS to be a well known abbreviation for uninterruptible power supply as is evidenced by the Merriam-Webster on-line printout Exhibit U, Compact Oxford Dictionary addressable at askoxford.com as is provided in Exhibit B, encarta.man.com,

Exhibit W, foldoc.org, Exhibit X, webopedia.com, Exhibit Y, yourdictionary.com, Exhibit Z, as well as numerous other websites found on the internet.

(26) Applicant further submits that the common portion of the marks at issue, "UPS", are further inherently weak and that Applicant's use will not give rise to any likelihood of confusion (especially in the channels of trade of Applicant and Opposer). Where common elements of conflicting marks may be words or letters that are weak, this fact reduces the likelihood of confusion. See *Smith v. Tobacco Byproducts & Chemical Corp.*, 243, Fed 2d 188 (CCPA 1957).

(27) "UPS" is a well recognized abbreviation and acronym for "uninterruptible power supply" and "universal power supply." The letters "UPS" and variations thereof are commonly used by many other registrants and sellers in the marketplace. This is evidenced by a number of third party marks registered on the Principal Register which include the letters "UPS" and variations thereof. The undersigned attorney, after making a brief search of the Office Records of the U.S. Patent and Trademark Office, has found a number of marks for the letters "UPS" and variations thereof which have been registered by the USPTO for goods in International Class 009. A representative sampling of the marks found are as follows (copies enclosed):

Exhibit	Mark	Reg. No.	Goods/Services
AA	BACK-UPS	1,689,902	Uninterruptible power supplies
BB	SMART-UPS	1,689,903	Uninterruptible power supplies

CC	UPS PLUS	1,749,282	Electrical and electronic equipment; namely, power supplies, voltage regulators, frequency/voltage converters, uninterruptible power supplies and power supply modules for use with computer systems, industrial control devices, test instrumentation and microprocessor-based devices
DD	MEASURE-UPS	1,811,966	Electronic apparatus for use with uninterruptible power supplies for the purpose of detecting environmental and security anomalies in computer rooms
EE	BACK-UPS PRO	1,921,637	Uninterruptible power supplies (used as a backup power supply) for computers and other sensitive electronic equipment
FF	WINUPS	2,067,751	Computer software, namely software for use in the custom design and configuration of power systems
GG	TELE-UPS	2,703,362	Power protection devices, namely uninterruptible power supplies for use as a backup power supply for computers, telephone systems and other electronic equipment
HH	TACTICAL UPS	3,444,320	Automated process control system, namely, micro-processor based hardware and software, etc., including power supplies and renewable battery system to provide backup power
II	EXTREME UPS	3,444,309	Electrical power distribution units; etc.

JJ	LEV-UPS	2,991,164	Uninterruptible power supply for microprocessor based products
KK	UPS ENHANCER	2,682,042	Voltage sag protectors for use in maintaining operation of sensitive electrical equipment, etc.
LL	MATRIX UPS	2,168,971	Modular uninterruptible power supplies for computers, and other sensitive electronic equipment
MM	BACK-UPS OFFICE	2,106,783	Power protection devices, namely, uninterruptible power supplies for use with computers and other sensitive electronic devices
NN	ROBOT/UPS	1,978,481	Computer programs for automating the shutdown and power-up of computers in response to power failures

(28) The concurrent registration of marks consisting of the letters "UPS", in particularity in International Class 009 and variations thereof, establishes that the United States Patent and Trademark Office recognizes that such a term (especially in the field of power supply systems) is entitled to a relatively narrow scope of protection and that the person who purchases such goods can readily distinguish between the marks containing such letters without any confusion.

(29) A trademark is given protection against use of its mark on any product or services which would reasonably be thought by the buying public to come from the same source. However, there is absolutely no foundation for

suggesting that the buying public would confuse package transit and delivery equipment and uninterruptible power supply hardware.

(30) When making purchasing decisions regarding goods, the reasonably prudent person standard of trademark law is elevated to the standard of the "discriminating purchaser". See *L. J. Mueller Furnace Co. v. United Conditioning Corp.*, 222 Fed. 2d 755, 106 USPQ 112 (CCPA 1955).

(31) Uninterruptible power supplies/universal power supplies and associated goods are undeniably expensive goods and the purchasers of such electrical supplies would be considered "discriminating purchasers" having a high degree of sophistication in their purchasing. A sophisticated consumer would undoubtedly be able to distinguish between highly specialized electrical power supply systems and peripheral equipment with hand-held computers and associated software for package delivery and the uninterruptible power supplies and related hardware of Applicant's mark.

(32) The term "UPS" is well known in the computer and information technology fields as being an abbreviation for "uninterruptible power supply" and "universal power supply". Those who are in the channels of trade related to the goods of Applicant's mark would readily associate the term "UPS" with uninterruptible power supply and not with any hardware associated with the delivery related goods and services of Opposer.

WHEREFORE, having made full answer to the Notice of Opposition, Applicant prays that the Opposition be dismissed.

For: ROSENBERG, KLEIN & LEE

6/24/08
Dated

Morton J. Rosenberg, Esq.
Registration No. 26,049
Attorney for Applicant

3458 Ellicott Center Drive, Suite 101
Ellicott City, MD 21043
Tel: 410-465-6678

CERTIFICATE OF SERVICE

The undersigned attorney hereby certifies that a copy of the foregoing Applicant's Answer to Notice of Opposition was served on the Opposer by mailing a true copy thereof by first class postage, prepaid, to: Stephen M. Schaetzel, King & Spalding LLP, 1180 Peachtree Street, N.E., Atlanta, Georgia 30309-3521, on this 24TH day of June 2008.

Morton J. Rosenberg, Esq.

Registered Aug. 23, 1949

Registration No. 514,285

PRINCIPAL REGISTER
Service Mark

UNITED STATES PATENT OFFICE

**United Parcel Service of America, Inc.,
Wilmington, Del.**

Act of 1946

Application September 2, 1947, Serial No. 533,084

(Statement)

United Parcel Service of America, Inc., a corporation duly organized under the laws of the State of Delaware and located at 100 West 10th Street, Wilmington, Delaware, has adopted and of itself and through its subsidiaries, is using the service mark shown in the accompanying drawing, for MOTOR VEHICLE DELIVERY SERVICE FOR RETAIL STORES, in Class 55, Services, and presents herewith five specimens showing said service mark as actually used in connection with the sale of such services; said service mark being used by applying it to building fronts, motor vehicle bodies, literature, stationery, business forms and business cards; and requests that the same be registered in the United States Patent Office on the Principal Register in accordance with the act of July 5, 1946.

The service mark was first used in 1933, and first used in the sale or advertising of services and the services rendered in commerce among the several States which may lawfully be regulated by Congress in 1933.

All wording appearing in the drawing of the mark including the words "Since 1907," but excepting the letters "U P S," are disclaimed apart from the mark as shown.

(Declaration)

Paul Oberkotter, being duly sworn, deposes and says that he is the secretary of the corporation, the applicant named in the foregoing statement; that he believes the foregoing statement to be true; that he believes said corporation is the owner of the service mark sought to be registered and which is used in interstate commerce, and that no other person, firm, corporation or association other than its own subsidiaries, to the best of his knowledge and belief, has the right to use such mark in commerce which may lawfully be regulated by Congress either in the identical form thereof, or in such near resemblance thereto as might be calculated to deceive; that the drawing and description truly represent the service mark sought to be registered; and that the booklet entitled, "A Good Idea and How it Grew," copies of which are submitted herewith, show the service mark as actually used in connection with the sale of services.

UNITED PARCEL SERVICE
OF AMERICA, INC.,
By PAUL OBERKOTTER,
Secretary.

EXHIBIT A

Int. Cl.: 39

Prior U.S. Cl.: 105

United States Patent and Trademark Office

Renewal

Reg. No. 514,285
Registered Aug. 23, 1949
OG Date Oct. 17, 1989

SERVICE MARK
PRINCIPAL REGISTER

UNITED PARCEL SERVICE OF AMERICA, INC. (DELAWARE CORPORATION)
GREENWICH OFFICE PARK 5
51 WEAVER STREET
GREENWICH, CT 06836

ALL WORDING APPEARING IN THE DRAWING OF THE MARK INCLUDING THE WORDS "SINCE 1907," BUT EXCEPTING THE LETTERS "U P S," ARE DISCLAIMED APART FROM THE MARK AS SHOWN.

FOR: MOTOR VEHICLE DELIVERY SERVICE FOR RETAIL STORES, IN CLASS 105 (INT. CL. 39).

FIRST USE 0-0-1933; IN COMMERCE 0-0-1933.

SER. NO. 533,084, FILED 9-2-1947.

In testimony whereof I have hereunto set my hand and caused the seal of The Patent and Trademark Office to be affixed on Oct. 17, 1989.

COMMISSIONER OF PATENTS AND TRADEMARKS

EXHIBIT A

United States Patent Office

966,774
Registered Aug. 21, 1973

PRINCIPAL REGISTER
Service Mark

Ser. No. 431,799, filed Aug. 4, 1972

UPS

United Parcel Service of America, Inc. (Delaware corporation)
643 W. 43rd St.
New York, N.Y. 10036

For: TRANSPORTATION OF PERSONAL PROPERTY FOR HIRE BY DIVERSE MODES OF TRANSPORTATION, in CLASS 105 (INT. CL. 39).
First use 1933; in commerce 1933.
Owner of Reg. Nos. 514,285 and 735,064.

EXHIBIT B

Int. Cl.: 39

Prior U.S. Cl.: 105

United States Patent and Trademark Office

10 Year Renewal

Reg. No. 966,774

Registered Aug. 21, 1973

Renewal Term Begins Aug. 21, 1993

SERVICE MARK
PRINCIPAL REGISTER

UPS

UNITED PARCEL SERVICE OF AMERICA, INC. (DELAWARE CORPORATION)
400 PERIMETER CENTER-TERRACE NORTH
ATLANTA, GA 30346

OWNER OF U.S. REG. NOS. 514,285 AND 735,064.

FOR: TRANSPORTATION OF PERSONAL PROPERTY FOR HIRE BY DIVERSE MODES OF TRANSPORTATION, IN CLASS 105 (INT. CL. 39).

FIRST USE 0-0-1933; IN COMMERCE 0-0-1933.

SER. NO. 72-431,799, FILED 8-4-1972.

In testimony whereof I have hereunto set my hand and caused the seal of The Patent and Trademark Office to be affixed on Aug. 24, 1993.

COMMISSIONER OF PATENTS AND TRADEMARKS

EXHIBIT B

Int. Cl.: 39

Prior U.S. Cl.: 105

United States Patent and Trademark Office

Reg. No. 1,277,400
Registered May 8, 1984

SERVICE MARK
Principal Register

United Parcel Service of America, Inc. (Delaware corporation)
Greenwich Office Park 5
51 Weaver St.
Greenwich, Conn. 06830

For: MOTOR VEHICLE AND AIR TRANSPORTATION OF PERSONAL PROPERTY, in CLASS 39 (U.S. Cl. 105).

First use Sep. 20, 1982; in commerce Sep. 20, 1982.

Owner of U.S. Reg. Nos. 735,064, 1,121,927 and others.

No claim is made to the exclusive right to use the words "2nd Day Air", apart from the mark as shown.

Ser. No. 402,340, filed Nov. 12, 1982.

H. M. FISHER, Examining Attorney

EXHIBIT C

Int. Cl.: 39

Prior U.S. Cl.: 105

United States Patent and Trademark Office

Reg. No. 1,375,109

Registered Dec. 10, 1985

SERVICE MARK
PRINCIPAL REGISTER

UNITED PARCEL SERVICE OF AMERICA, INC. (DELAWARE CORPORATION)
51 WEAVER ST.
GREENWICH OFFICE PARK 5
GREENWICH, CT 06830

FOR: MOTOR VEHICLE AND AIR TRANSPORTATION OF PERSONAL PROPERTY, IN CLASS 39 (U.S. CL. 105).

FIRST USE 9-20-1982; IN COMMERCE 9-20-1982.

OWNER OF U.S. REG. NOS. 735,064 AND 1,121,927.

NO CLAIM IS MADE TO THE EXCLUSIVE RIGHT TO USE "NEXT DAY AIR", APART FROM THE MARK AS SHOWN.

SER. NO. 402,341, FILED 11-12-1982.

H. M. FISHER, EXAMINING ATTORNEY

EXHIBIT D

Int. Cl.: 39

Prior U.S. Cl.: 105

United States Patent and Trademark Office

Reg. No. 1,460,348
Registered Oct. 6, 1987

SERVICE MARK
PRINCIPAL REGISTER

UPS AIR CARGO SERVICE

UNITED PARCEL SERVICE OF AMERICA, INC. (DELAWARE CORPORATION), DBA UNITED PARCEL SERVICE CO.
GREENWICH OFFICE PARK 5
51 WEAVER STREET
GREENWICH, CT 06830

FOR: MOTOR VEHICLE AND AIR TRANSPORTATION OF PERSONAL PROPERTY, IN CLASS 39 (U.S. CL. 105).

FIRST USE 10-21-1985; IN COMMERCE 10-21-1985.

OWNER OF U.S. REG. NO. 1,375,109 AND OTHERS.

NO CLAIM IS MADE TO THE EXCLUSIVE RIGHT TO USE "AIR CARGO SERVICE", APART FROM THE MARK AS SHOWN.

SER. NO. 643,511, FILED 2-9-1987.

IRA J. GOODSAID, EXAMINING ATTORNEY

EXHIBIT E

Int. Cl.: 39

Prior U.S. Cl.: 105

United States Patent and Trademark Office

Reg. No. 1,874,248
Registered Jan. 17, 1995

SERVICE MARK
PRINCIPAL REGISTER

UPS PREFERRED

UNITED PARCEL SERVICE OF AMERICA, INC. (DELAWARE CORPORATION)
400 PERIMETER CENTER-TERRACES NORTH
ATLANTA, GA 30346

FOR: TRANSPORTATION BY AIR, RAIL, BOAT, AND MOTOR VEHICLE OF PACKAGES AND FREIGHT, IN CLASS 39 (U.S. CL. 105).

FIRST USE 3-15-1994; IN COMMERCE 3-15-1994.

OWNER OF U.S. REG. NOS. 966,774, 1,751,581 AND OTHERS.

SER. NO. 74-498,079, FILED 3-7-1994.

DAVID C. REIHNER, EXAMINING ATTORNEY

EXHIBIT F

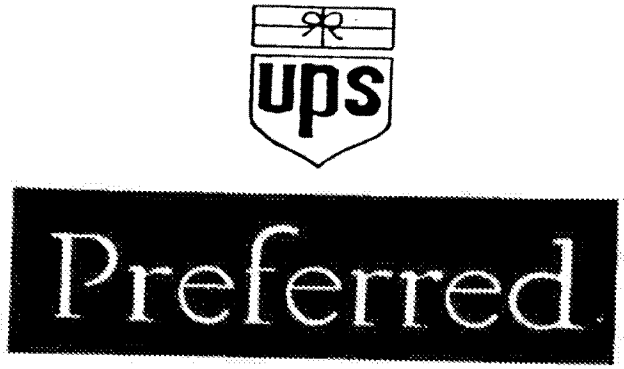
Int. Cl.: 39

Prior U.S. Cl.: 105

United States Patent and Trademark Office

Reg. No. 1,876,943
Registered Jan. 31, 1995

SERVICE MARK
PRINCIPAL REGISTER



UNITED PARCEL SERVICE OF AMERICA, INC. (DELAWARE CORPORATION)
400 PERIMETER CENTER-TERRACES NORTH
ATLANTA, GA 30346

FOR: TRANSPORTATION BY AIR, RAIL, BOAT, AND MOTOR VEHICLE OF PACKAGES AND FREIGHT, IN CLASS 39 (U.S. CL. 105).

FIRST USE 3-15-1994; IN COMMERCE 3-15-1994.

OWNER OF U.S. REG. NOS. 735,064, 1,376,321 AND OTHERS.

SER. NO. 74-499,043, FILED 3-10-1994.

DAVID C. REIHNER, EXAMINING ATTORNEY

EXHIBIT G

Int. Cl.: 39

Prior U.S. Cl.: 105

United States Patent and Trademark Office

Reg. No. 1,878,016
Registered Feb. 7, 1995

SERVICE MARK
PRINCIPAL REGISTER

UPS NEXT DAY AIR

UNITED PARCEL SERVICE OF AMERICA, INC. (DELAWARE CORPORATION)
55 GLENLAKE PARKWAY, NE
ATLANTA, GA 30328

FOR: MOTOR VEHICLE AND AIR TRANSPORTATION OF PERSONAL PROPERTY, IN CLASS 39 (U.S. CL. 105).

FIRST USE 12-0-1984; IN COMMERCE 12-0-1984.

OWNER OF U.S. REG. NOS. 1,375,109, 1,376,321 AND OTHERS.

NO CLAIM IS MADE TO THE EXCLUSIVE RIGHT TO USE "NEXT DAY AIR", APART FROM THE MARK AS SHOWN.

SER. NO. 74-504,436, FILED 3-24-1994.

LYNN A. LUTHEY, EXAMINING ATTORNEY

EXHIBIT H

Int. Cl.: 39

Prior U.S. Cl.: 105

United States Patent and Trademark Office

Reg. No. 1,878,918
Registered Feb. 14, 1995

SERVICE MARK
PRINCIPAL REGISTER

UPS 2ND DAY AIR

UNITED PARCEL SERVICE OF AMERICA, INC. (DELAWARE CORPORATION)
55 GLENLAKE PARKWAY, NE
ATLANTA, GA 30328

FOR: MOTOR VEHICLE AND AIR TRANSPORTATION OF PERSONAL PROPERTY, IN CLASS 39 (U.S. CL. 105).

FIRST USE 12-0-1984; IN COMMERCE 12-0-1984.

OWNER OF U.S. REG. NOS. 1,277,400, 1,376,321 AND OTHERS.

NO CLAIM IS MADE TO THE EXCLUSIVE RIGHT TO USE "2ND DAY AIR", APART FROM THE MARK AS SHOWN.

SER. NO. 74-504,442, FILED 3-24-1994.

LYNN A. LUTHEY, EXAMINING ATTORNEY

EXHIBIT I

Int. Cl.: 9

Prior U.S. Cls.: 21, 23, 26, 36, and 38

Reg. No. 2,098,168

United States Patent and Trademark Office

Registered Sep. 16, 1997

TRADEMARK
PRINCIPAL REGISTER

UPS TRACKPAD

UNITED PARCEL SERVICE OF AMERICA, INC. (DELAWARE CORPORATION)
55 GLENLAKE PARKWAY, NE
ATLANTA, GA 30328

FOR: COMPUTER PROGRAMS AND HAND-HELD COMPUTERS USED FOR COLLECTION OF PACKAGE TRANSIT AND DELIVERY INFORMATION, IN CLASS 9 (U.S. CLS. 21, 23, 26, 36 AND 38).

FIRST USE 10-0-1995; IN COMMERCE 10-0-1995.

SN 75-026,612, FILED 12-1-1995.

JOHN TANG, EXAMINING ATTORNEY

EXHIBIT J

Int. Cl.: 9

Prior U.S. Cls.: 21, 23, 26, 36 and 38

Reg. No. 2,128,739

United States Patent and Trademark Office

Registered Jan. 13, 1998

TRADEMARK
PRINCIPAL REGISTER

UPS ONLINE

UNITED PARCEL SERVICE OF AMERICA, INC. (DELAWARE CORPORATION)
55 GLENLAKE PARKWAY, NE
ATLANTA, GA 30328

FOR: SOFTWARE FOR USE IN PREPARING AND PRINTING SHIPPING DOCUMENTS AND INVOICES AND TRACKING THE SHIPPED PACKAGES, IN CLASS 9 (U.S. CLS. 21, 23, 26, 36 AND 38).

FIRST USE 7-1-1996; IN COMMERCE 7-1-1996.

NO CLAIM IS MADE TO THE EXCLUSIVE RIGHT TO USE "ONLINE", APART FROM THE MARK AS SHOWN.

SER. NO. 75-215,162, FILED 12-18-1996.

MIDGE BUTLER, EXAMINING ATTORNEY

EXHIBIT K

Int. Cl.: 9

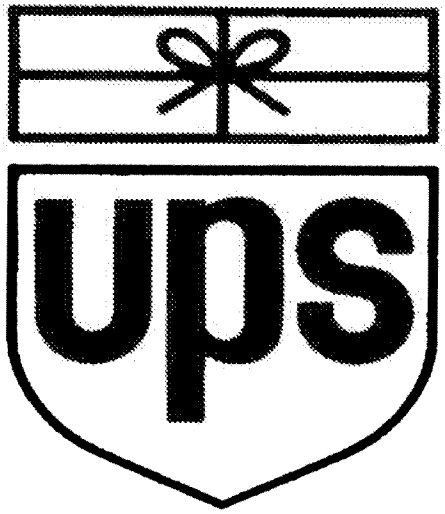
Prior U.S. Cls.: 21, 23, 26, 36 and 38

United States Patent and Trademark Office

Reg. No. 2,278,090

Registered Sep. 14, 1999

TRADEMARK
PRINCIPAL REGISTER



UNITED PARCEL SERVICE OF AMERICA, INC. (DELAWARE CORPORATION)
55 GLENLAKE PARKWAY, NE
ATLANTA, GA 30328

FOR: SOFTWARE FOR USE IN PREPARING AND PRINTING SHIPPING DOCUMENTS AND INVOICES AND TRACKING THE SHIPPED PACKAGES, IN CLASS 9 (U.S. CLS. 21, 23, 26, 36 AND 38).

FIRST USE 7-1-1996; IN COMMERCE 7-1-1996.

OWNER OF U.S. REG. NOS. 2,115,201, 2,128,739 AND OTHERS.

SER. NO. 75-536,053, FILED 8-13-1998.

CAROLYN PENDLETON, EXAMINING ATTORNEY

EXHIBIT L

Int. Cls.: 9, 38, and 39

Prior U.S. Cls.: 21, 23, 26, 36, 38, 100, 101, 104, and 105

United States Patent and Trademark Office

Reg. No. 2,582,489

Registered June 18, 2002

TRADEMARK
SERVICE MARK
PRINCIPAL REGISTER

UPS ONLINE ENVOY

UNITED PARCEL SERVICE OF AMERICA, INC. (DELAWARE CORPORATION)
55 GLENLAKE PARKWAY, NE
ATLANTA, GA 30328

FOR: SOFTWARE FOR USE IN PREPARING AND PRINTING SHIPPING DOCUMENTS AND INVOICES, AND TRACKING OF THE SHIPPED PACKAGES, IN CLASS 9 (U.S. CLS. 21, 23, 26, 36 AND 38).

FIRST USE 9-0-1998; IN COMMERCE 9-0-1998.

FOR: TELECOMMUNICATION SERVICES, NAMELY, PROVIDING INFORMATION ON INTERNATIONAL TRANSPORTATION AND DELIVERY SERVICES AND PACKAGE TRACKING USING A GLOBAL COMPUTER NETWORK, IN CLASS 38 (U.S. CLS. 100, 101 AND 104).

FIRST USE 9-0-1998; IN COMMERCE 9-0-1998.

FOR: DELIVERY OF PERSONAL PROPERTY BY AIR, RAIL, BOAT AND MOTOR VEHICLE, IN CLASS 39 (U.S. CLS. 100 AND 105).

FIRST USE 9-0-1998; IN COMMERCE 9-0-1998.

NO CLAIM IS MADE TO THE EXCLUSIVE RIGHT TO USE "ONLINE", APART FROM THE MARK AS SHOWN.

SN 75-237,645, FILED 2-6-1997.

MIDGE BUTLER, EXAMINING ATTORNEY

EXHIBIT M

Int. Cls.: 9 and 39

Prior U.S. Cls.: 21, 23, 26, 36, 38, 100, and 105

United States Patent and Trademark Office

Reg. No. 2,830,249

Registered Apr. 6, 2004

TRADEMARK
SERVICE MARK
PRINCIPAL REGISTER

UPS INTERNET TOOLS

UNITED PARCEL SERVICE OF AMERICA, INC.
(DELAWARE CORPORATION)
55 GLENLAKE PARKWAY, NE
ATLANTA, GA 30328

FOR: SOFTWARE FOR USE IN PREPARING AND PRINTING SHIPPING FORMS, DOCUMENTS AND INVOICES, AND TRACKING OF THE SHIPPED PACKAGES, IN CLASS 9 (U.S. CLS. 21, 23, 26, 36 AND 38).

FIRST USE 10-7-1997; IN COMMERCE 10-7-1997.

FOR: DELIVERY OF PERSONAL PROPERTY BY AIR, RAIL, BOAT AND MOTOR VEHICLE; PROVIDING COMPUTERIZED INFORMATION ON DOMESTIC AND INTERNATIONAL TRANSPORTATION AND DELIVERY SERVICES AND PACKAGE TRACKING, IN CLASS 39 (U.S. CLS. 100 AND 105).

FIRST USE 10-7-1997; IN COMMERCE 10-7-1997.

OWNER OF U.S. REG. NOS. 735,064, 1,121,927, AND OTHERS.

NO CLAIM IS MADE TO THE EXCLUSIVE RIGHT TO USE "INTERNET TOOLS", APART FROM THE MARK AS SHOWN.

SN 75-424,380, FILED 1-27-1998.

JENNIFER KRISP, EXAMINING ATTORNEY

EXHIBIT N

Int. Cl.: 9

Prior U.S. Cls.: 21, 23, 26, 36, and 38

United States Patent and Trademark Office

Reg. No. 2,483,193
Registered Aug. 28, 2001

TRADEMARK
PRINCIPAL REGISTER

UPS.COM

UNITED PARCEL SERVICE OF AMERICA, INC.
(DELAWARE CORPORATION)
55 GLENLAKE PARKWAY, NE
ATLANTA, GA 30328

FOR: COMPUTER SOFTWARE FOR USE IN CONNECTION WITH WORLDWIDE PICK UP, TRACING, AND DELIVERY OF PERSONAL PROPERTY BY AIR, RAIL, BOAT, AND MOTOR VEHICLES , IN CLASS 9 (U.S. CLS. 21, 23, 26, 36 AND 38).

FIRST USE 12-0-1994; IN COMMERCE 12-0-1994.

OWNER OF U.S. REG. NO. 966,774.

SN 75-693,710, FILED 4-29-1999.

JENNIFER KRISP, EXAMINING ATTORNEY

EXHIBIT O

Int. Cls.: 9, 35, and 39

Prior U.S. Cls.: 21, 23, 26, 36, 38, 100, 101, 102, and 105

Reg. No. 3,160,062

United States Patent and Trademark Office

Registered Oct. 17, 2006

TRADEMARK
SERVICE MARK
PRINCIPAL REGISTER

UPS WORLDSHIP

UNITED PARCEL SERVICE OF AMERICA, INC. (DELAWARE CORPORATION)
55 GLENLAKE PARKWAY, NE
ATLANTA, GA 30328

FOR: COMPUTER HARDWARE, OPERATING SOFTWARE AND PERIPHERALS, MODEMS, LASER AND THERMAL PRINTERS, SCANNERS, NETWORK INTERFACE CARDS, ELECTRICAL AND FIBER OPTIC CABLES, SCALES AND DISPLAY SCREENS, FOR PACKAGE SHIPPING RATE CALCULATORS, SHIPPING RECORD KEEPING AND SOFTWARE FOR USE IN PREPARING AND PRINTING SHIPPING DOCUMENTS AND INVOICES, AND TRACKING OF SHIPPED PACKAGES, IN CLASS 9 (U.S. CLS. 21, 23, 26, 36 AND 38).

FIRST USE 12-12-1994; IN COMMERCE 12-12-1994.

FOR: COMPUTERIZED TRACKING AND TRACING OF PACKAGES IN TRANSIT, NAMELY, PROVIDING COMPUTERIZED INFORMATION ON DOMESTIC AND INTERNATIONAL TRANSPORTATION AND DELIVERY SERVICES, IN CLASS 35 (U.S. CLS. 100, 101 AND 102).

FIRST USE 12-12-1994; IN COMMERCE 12-12-1994.

FOR: TRANSPORTATION AND DELIVERY OF PERSONAL PROPERTY BY AIR, RAIL, BOAT AND MOTOR VEHICLE, IN CLASS 39 (U.S. CLS. 100 AND 105).

FIRST USE 12-12-1994; IN COMMERCE 12-12-1994.

THE MARK CONSISTS OF STANDARD CHARACTERS WITHOUT CLAIM TO ANY PARTICULAR FONT, STYLE, SIZE, OR COLOR.

OWNER OF U.S. REG. NOS. 2,151,185 AND 2,485,673.

SN 78-444,912, FILED 7-1-2004.

ANNE MADDEN, EXAMINING ATTORNEY

Int. Cl.: 9

Prior U.S. Cls.: 21, 23, 26, 36, and 38

United States Patent and Trademark Office

Reg. No. 2,520,558
Registered Dec. 18, 2001

TRADEMARK
PRINCIPAL REGISTER

UPS

UNITED PARCEL SERVICE OF AMERICA, INC.
(DELAWARE CORPORATION)
55 GLENLAKE PARKWAY, NE
ATLANTA, GA 30328

FOR: SOFTWARE FOR USE IN PREPARING AND PRINTING SHIPPING DOCUMENTS AND INVOICES AND TRACKING THE SHIPPED PACKAGES, IN CLASS 9 (U.S. CLS. 21, 23, 26, 36 AND 38).

FIRST USE 10-0-1998; IN COMMERCE 10-0-1998.

OWNER OF U.S. REG. NOS. 2,098,168, 2,115,201, AND 2,128,739.

SN 75-546,196, FILED 8-31-1998.

DEIRDRE GILLIS, EXAMINING ATTORNEY

EXHIBIT Q

Int. Cls.: 9, 16, 25, 35, 38, and 42

Prior U.S. Cls.: 2, 5, 21, 22, 23, 26, 29, 36, 37, 38, 39, 50, 100, 101, 102, and 104

Reg. No. 2,973,108

United States Patent and Trademark Office

Registered July 19, 2005

TRADEMARK
SERVICE MARK
PRINCIPAL REGISTER

UNITED PARCEL SERVICE OF AMERICA, INC. (DELAWARE CORPORATION)
55 GLENLAKE PARKWAY, NE
ATLANTA, GA 30325

FOR: COMPUTER HARDWARE AND COMPUTER SOFTWARE IN THE FIELD OF TRANSPORTATION AND DELIVERY AND IN CONNECTION WITH WORLDWIDE PICK-UP, TRACING AND DELIVERY; BATTERIES; ALTERNATIVE POWER SUPPLY APPLIANCES, NAMELY, VOLTAGE SURGE PROTECTORS; MAGNETIC DISCS AND TAPES; COMPUTER PRINTERS, SCALES AND SCANNERS; COMPUTER SOFTWARE FOR PROVIDING AUTOMATED DOWNLOAD OF FILES, FOR PREPARING AND PRINTING OF SHIPPING LABELS, DOCUMENTS AND INVOICES, FOR PROVIDING ELECTRONIC SHIPPING LABELS, SHIPPING DOCUMENTS AND INVOICES, FOR PROVIDING INFORMATION ON AVAILABLE TRANSPORTATION AND DELIVERY SERVICES, AND FOR PROVIDING PROOF OF DELIVERY DOCUMENTATION, INCLUDING DIGITIZED SIGNATURE OF THE RECIPIENT OF THE PACKAGE AND THE RECEIPT, TRANSMISSION AND PROCESSING OF CUSTOMER IDENTIFYING SHIPPING ACCOUNT INFORMATION, IN CLASS 9 (U.S. CLS. 21, 23, 26, 36 AND 38).

FIRST USE 3-29-2003; IN COMMERCE 3-29-2003.

FOR: PRINTED MATERIALS PERTAINING TO INFORMATION TRANSPORTATION AND DELIVERY, NAMELY, PRESS RELEASES, PAMPHLETS, BROCHURES, NEWSLETTERS, BOOKS, POSTERS, PERIODICALS, CALENDARS, MAGAZINES, PRINTED INSTRUCTIONAL, EDUCATIONAL AND TEACHING MATERIAL, PAPER BANNERS, ENVELOPES, CARDBOARD BOXES AND PACKAGES, SHIPPING AND ADDRESS LABELS, STATIONERY, DESK SETS, PEN AND PENCIL SETS, PEN, PAPER CLIP DISPENSERS, PEN AND HOLDER DESK SETS, NOTE HOLDERS, FOUNTAIN PENS, DESK FOLDERS, STATIONERY-TYPE PORTFOLIOS, BUSINESS CARD FILES, RING BINDERS, LETTER OPENERS, DESK CADDIES, PACKING PAPER, PAPER BAGS, CARDBOARD, CARDBOARD ENVELOPES AND CARTONS; PLASTIC BAGS AND ENVELOPES AND POUCHES FOR PACKAGING, PLASTIC BUBBLE PACKS FOR WRAPPING OR PACKAGING, IN CLASS 16 (U.S. CLS. 2, 5, 22, 23, 29, 37, 38 AND 50).

FIRST USE 3-29-2003; IN COMMERCE 3-29-2003.

FOR: CLOTHING, NAMELY, HATS, SHORTS, SWEATERS, JACKETS, SOCKS, COATS, T-SHIRTS, PANTS, SHIRTS, VESTS, SWEATSHIRTS, RAINWEAR, FOOTWEAR AND GLOVES, IN CLASS 25 (U.S. CLS. 22 AND 39).

FIRST USE 3-29-2003; IN COMMERCE 3-29-2003.

FOR: ADVERTISING SERVICES; LOGISTICS MANAGEMENT IN THE FIELD OF TRANSPORTATION AND DELIVERY; BUSINESS MANAGEMENT SERVICES; BUSINESS CONSULTING SERVICES; BUSINESS ADMINISTRATION SERVICES; PROVIDING FACILITIES FOR THE USE OF OFFICE EQUIPMENT AND MACHINERY; MANAGEMENT ASSISTANCE SERVICES IN THE FIELD OF TRANS-

PORTATION AND DELIVERY; MANAGEMENT CONSULTING SERVICES; PROVIDING COMPUTERIZED TRACKING AND TRACING OF PACKAGES IN TRANSIT; DISTRIBUTION OF ADVERTISING SAMPLES FOR OTHERS; MAIL SORTING HANDLING AND RECEIVING SERVICES; RETAIL STORE SERVICES FEATURING STAMPS AND OFFICE SUPPLIES; DATA PROCESSING SERVICES; PHOTOCOPYING SERVICES; DOCUMENT REPRODUCTION SERVICES; FRANCHISING, NAMELY, OFFERING TECHNICAL ASSISTANCE IN THE ESTABLISHMENT AND/OR OPERATION OF RETAIL MAILING, SHIPPING, PACKAGING, FAXING AND ELECTRONIC COMMUNICATION OUTLETS; PROVIDING AUTOMATED REGISTRATION FOR CUSTOMER IDENTIFYING SHIPPING ACCOUNT INFORMATION OVER THE GLOBAL COMPUTER NETWORK; LICENSING OF COMPUTER SOFTWARE; TRANSPORTATION NETWORK MANAGEMENT SOLUTION SERVICES; ARRANGING EXPEDITED PICK-UP, STORAGE, TRANSPORTATION AND DELIVERY SERVICES; CUSTOMS CLEARANCE SERVICES, IN CLASS 35 (U.S. CLS. 100, 101 AND 102).

FIRST USE 3-29-2003; IN COMMERCE 3-29-2003.

FOR: COMMUNICATIONS SERVICES AND TELECOMMUNICATIONS SERVICES, NAMELY, ELECTRONIC TRANSMISSION OF MESSAGES, DATA AND VOICE DATA; FACSIMILE AND ELECTRONIC MESSAGE SERVICES, MESSAGE DELIVERY AND SENDING SERVICES, TELEPHONE SERVICES AND WIRE SERVICES; SERVICES OF TRANSPORTATION OF LETTERS, DOCUMENTS AND OTHER TEXTS BY TELEX, BY TELEPHONE, BY ELECTRONIC MEANS; ONLINE DOCUMENT DELIVERY VIA A GLOBAL COMPUTER NETWORK, IN CLASS 38 (U.S. CLS. 100, 101 AND 104).

FIRST USE 3-29-2003; IN COMMERCE 3-29-2003.

FOR: LEGAL SERVICES; SCIENTIFIC RESEARCH SERVICES; DESIGN AND DEVELOPMENT OF COMPUTER HARDWARE AND SOFTWARE; CONSULTING SERVICES IN THE FIELD OF DESIGN, SELECTION, IMPLEMENTATION AND USE OF COMPUTER HARDWARE AND SOFTWARE SYSTEMS FOR OTHERS, IN CLASS 42 (U.S. CLS. 100 AND 101).

FIRST USE 3-29-2003; IN COMMERCE 3-29-2003.

OWNER OF U.S. REG. NOS. 1,461,044, 2,278,090, AND OTHERS.

SN 78-229,056, FILED 3-24-2003.

RAUL CORDOVA, EXAMINING ATTORNEY

What does **UPS** stand for?

Your abbreviation search returned 32 meanings

Category Filters > All definitions (32) | Information Technology (8) | Military & Government (10) | Science & Medicine (12) | Organizations, Schools, etc. (7) | Business & Finance (3) | Slang, Chat & Pop culture (2)

sort results: alphabetical | **rank** ?

Rank	Abbr.	Meaning
******	UPS	United Parcel Service
******	UPS	Uninterruptible Power Supply
******	UPS	University of Puget Sound
*****	UPS	Uninterruptible Power System
*****	UPS	Universal Press Syndicate
*****	UPS	Universal Power Supply
****	UPS	Ultraviolet Photoelectron Spectroscopy
****	UPS	Universal Polar Stereographic
****	UPS	Uninterrupted Power Source
***	UPS	Underground Press Syndicate
***	UPS	Units Per Second
***	UPS	Under Provisions of Section
***	UPS	Unfolded Protein Response
***	UPS	Underwater Photographic Society
***	UPS	Uniform Particle Size
***	UPS	Unix Print Services
***	UPS	User Planning System
**	UPS	Unity Primary School (Singapore)
**	UPS	Uniform Procurement System
**	UPS	United Publicity Services plc (UK)

Results paging: **1** 2 next page >

Note: We have 236 other definitions for **UPS** in our Acronym Attic

new search | suggest new definition

Search for **UPS** in Online Dictionary Encyclopedia

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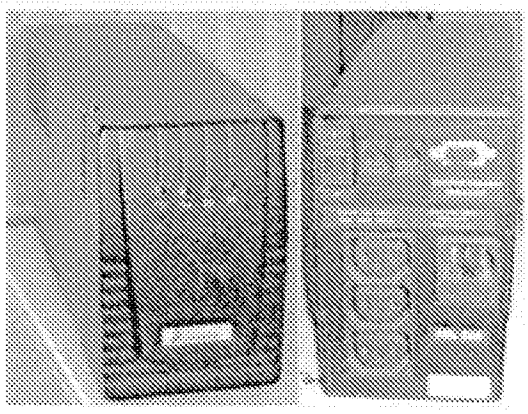
UPRH UPRR UPS VA UPSC
UPRM UPRS UPSA UPSD
UPRN UPRSD UPSAC UPSEB
UPRONA UPRT UPSAMS UPSI
UPROSE UPRTC UPSB UPSID

Uninterruptible power supply

From Wikipedia, the free encyclopedia



A small free-standing UPS

An **uninterruptible power supply** (**UPS**), also known as a **continuous power supply** (**CPS**) or a **battery backup** is a device which maintains a continuous supply of electric power to connected equipment by supplying power from a separate source when utility power is not available. It differs from an auxiliary power supply or standby generator, which does not provide instant protection from a momentary power interruption. Integrated systems that have UPS and standby generator components are often referred to as emergency power systems.

There are three distinct types of UPS: off-line, line-interactive and double conversion (also called on-line). An off-line UPS remains idle until a power failure occurs, and then switches from utility power to its own power source, almost instantaneously. An on-line UPS continuously powers the protected load from its reserves (usually lead-acid batteries or stored kinetic energy), while simultaneously replenishing the reserves from the AC power. It also provides protection against all common power problems, and for this reason it is also known as a power conditioner and a line conditioner.

While not limited to safeguarding any particular type of equipment, a UPS is typically used to protect computers, telecommunication equipment or other electrical equipment where an unexpected power disruption could cause injuries, fatalities, serious business disruption or data loss. UPS units come in sizes ranging from units which will back up a single computer without monitor (around 200 VA) to units which will power entire data centers or buildings (several megawatts).

Historically, UPSs were expensive and were most likely to be used on expensive computer systems and in areas where the power supply is interrupted frequently. As prices have fallen, UPS units have become an essential piece of equipment for data centers and business computers, and are also used for personal computers, entertainment systems and more.

Contents

Common power problems

EXHIBIT T

There are various common power problems that UPS units are used to correct. They are as follows (with a typical example of damage that might be caused):

1. Power failure — Total loss of utility power: Causes electrical equipment to stop working.
2. Voltage sag — Transient (short term) under-voltage: Causes flickering of lights.
3. Voltage spike — Transient (short term) over-voltage i.e. spike or peak: Causes wear or acute damage to electronic equipment.
4. Under-voltage (brownout) — Low line voltage for an extended period of time: Causes overheating in motors.
5. Over-voltage — Increased voltage for an extended period of time: Causes light bulbs to fail.
6. Line noise — Distortions superimposed on the power waveform: Causes electro magnetic interference.
7. Frequency variation — Deviation from the nominal frequency (50 or 60 Hz): Causes motors to increase or decrease speed and line-driven clocks and timing devices to gain or lose time.
8. Switching transient — Instantaneous undervoltage (notch) in the range of milliseconds to seconds: May cause erratic behavior in some equipment, memory loss, data error, data loss and component stress.
9. Harmonic distortion — Multiples of power frequency superimposed on the power waveform: Causes excess heating in wiring and fuses.

UPS units are divided into categories based on which of the above problems they address. Some manufacturers categorize their supplies as a level 3, 5, or 9, if they address the first 3, 5, or 9 power problem respectively.

UPS Technologies

The general categories of modern UPS systems are *on-line*, *line-interactive*, and *standby*. An on-line UPS uses a "double conversion" method of accepting AC input, rectifying to DC for passing through the battery (or battery strings), then inverting back to AC for powering the protected equipment. A line-interactive UPS maintains the inverter in line and redirecting the battery's DC current path from the normal charging mode to supplying current when power is lost. In a standby ("off-line") system the load is powered directly by the input power and the backup power circuitry is only invoked when the utility power fails. Most UPS below 1 kVA are of the line-interactive or standby variety which are usually less expensive.

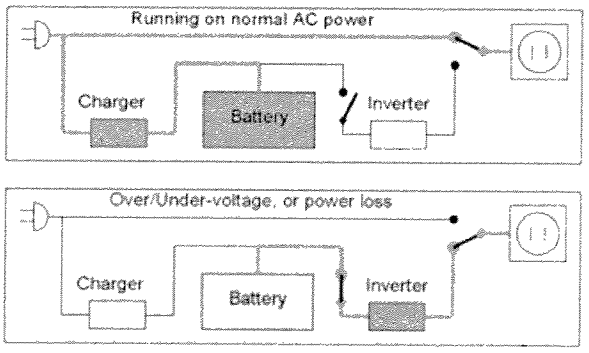
For large power units, Dynamic Uninterruptible Power Supply are sometimes used. A synchronous motor/alternator is connected on the mains via a choke. Energy is stored in a flywheel. When the mains power fails, an Eddy-current regulation maintains the power on the load. DUPS are sometimes combined or integrated with a diesel-genset.

Fuel cell UPS have been developed in recent years using hydrogen and a fuel cell as a power source, potentially providing long run times in a small space. A fuel cell replaces the batteries used in other UPS designs.

Offline / Standby

The Offline / Standby UPS offers only the most basic features, providing surge protection and battery backup. Usually the Standby UPS offers no battery capacity monitoring or self-test capability, making it the least reliable type of UPS since it could fail at any moment without warning. These are also the least expensive, selling for as little as US$75. The Standby UPS may be worse than using nothing at all, because it gives the user a false sense of security of being assurred protection that may not work when needed the most.

Offline / Standby UPS



Typical protection time: 0 - 20 minutes

Capacity expansion: Usually not available

With this type of UPS, a user's equipment is normally connected directly to incoming utility power with the same voltage transient clamping devices used in a common surge protected plug strip connected across the power line. When the incoming utility voltage falls below a predetermined level the UPS turns on its internal DC-AC inverter circuitry, which is powered from an internal storage battery. The SBS then mechanically switches the connected equipment on to its DC-AC inverter output. The switch over time is stated by most manufacturers as being less than 4 milliseconds, but typically can be as long as 25 milliseconds depending on the amount of time it takes the Standby UPS to detect the lost utility voltage.

Line-interactive

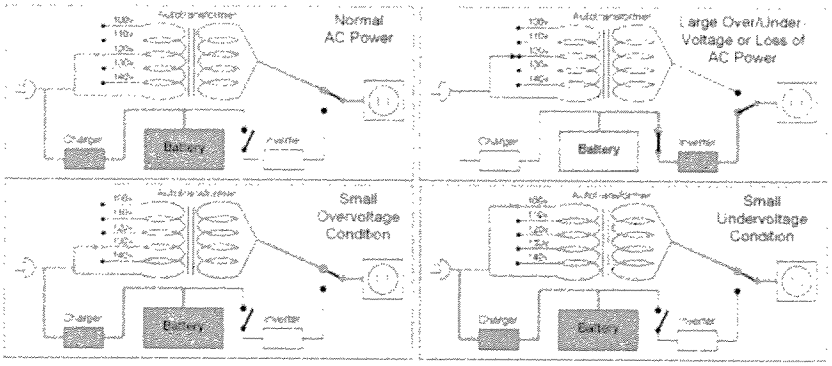
The Line-Interactive UPS is similar in operation to a Standby UPS, but with the addition of a multi-tap variable-voltage autotransformer. This is a special type of electrical transformer that can add or subtract powered coils of wire, thereby

Line-Interactive UPS

EXHIBIT T

increasing or decreasing the magnetic field and the output voltage of the transformer.

This type of UPS is able to tolerate continuous undervoltage brownouts and overvoltage surges without consuming the limited reserve battery power. It instead compensates by auto-selecting different power taps on the autotransformer. Changing the autotransformer tap can cause a very brief output power disruption, so the UPS may *chirp* for a moment, as it briefly switches to battery before changing the selected power tap.



Typical protection time: 5 - 30 minutes
Capacity expansion: Yes, several hours

Autotransformers can be engineered to cover a wide range of varying input voltages, but this also increases the number of taps and the size, weight, complexity, and expense of the UPS. It is common for the autotransformer to only cover a range from about 90v to 140v for 120v power, and then switch to battery if the voltage goes much higher or lower than that range.

In low-voltage conditions the UPS will use more amperage than normal so it may need a higher amperage circuit than a normal device. For example to power a 1000 watt device at 120 volts, the UPS will draw 8.32 amps. If a brownout occurs and the voltage drops to 100 volts, the UPS will draw 10 amps to compensate. This also works in reverse, so that in an overvoltage condition, the UPS will need fewer amps of current.

Double-Conversion / Online

The Online UPS is ideal for environments where electrical isolation is necessary or for equipment that is very sensitive to power fluctuations. Although once previously reserved for very large installations of 10kW or more, advances in technology have permitted it to now be available as a common consumer device, supplying 500 watts or less. The Online UPS is generally more expensive but may be necessary when the power environment is "noisy" such as in industrial settings, for larger equipment loads like data centers, or when operation from an extended-run backup generator is necessary.

Typical protection time:
5 - 30 minutes
Capacity expansion:
Yes, several hours

The basic technology of the Online UPS is the same as in a Standby or Line-Interactive UPS. However it typically costs much more, due to it having a much greater amperage AC-to-DC battery-charger/rectifier, and with the rectifier and inverter designed to run continuously with improved cooling systems. It is called a *Double-Conversion* UPS due to the rectifier directly driving the inverter, even when powered from normal AC current.

In an Online UPS, the batteries are always connected to the inverter, so that no power transfer switches are necessary. When power loss occurs, the rectifier simply drops out of the circuit and the batteries keep the power steady and unchanged. When power is restored, the rectifier resumes carrying most of the load and begins charging the batteries, though the charging current may be limited to prevent the high-power rectifier from overheating the batteries and boiling off the electrolyte.

The main advantage to the on-line UPS is its ability to provide an electrical firewall between the incoming utility power and sensitive electronic equipment. While the Standby and Line-Interactive UPS merely filters the input utility power, the Double-Conversion UPS provides a layer of insulation from power quality problems. It allows control of output voltage and frequency regardless of input voltage and frequency.

Ferro-resonant

Ferro-resonant units operate in the same way as a standby UPS unit with the exception that a ferro-resonant transformer is used to filter the output. This transformer is designed to hold energy long enough to cover the time between switching from line power to battery power and effectively eliminates the transfer time. Many ferro-resonant UPSs are 90-93% efficient and offer excellent isolation.

Typical protection time:
0.016 seconds
Capacity expansion:
No

While this used to be the dominant type of UPS, they are no longer used for common applications. Power factor correcting equipment found in newer computer systems interacts with static ferro-resonant transformers, causing potentially damaging oscillations, and the transformer itself can create distortions which yield power less acceptable than poor quality line AC. These units are still used in some industrial settings, but have mostly disappeared from use with general computer equipment. Many ferro-resonant UPSs utilizing controlled ferro technology may not interact with power-factor-correcting equipment.

DC-Power Supply

A UPS designed for powering DC equipment is very similar to an online UPS, except that it does not need an

Typica'

EXHIBIT T

output inverter, and often the powered device does not need a power supply. Rather than converting AC to DC to charge batteries, then DC to AC to power the external device, and then back to DC inside the powered device, some equipment accepts DC power directly and allows one or more conversion steps to be eliminated.

Several hours

Capacity expansion:

Yes

Many systems used in telecommunications use 48 volt DC power, because it is not considered a *high-voltage* by most electrical codes and is exempt from many safety regulations, such as being installed in conduit and junction boxes. DC has typically been the dominant power source for telecommunications, and AC has typically been the dominant source for computers and servers.

There has been much experimentation with 48v DC power for computer servers, in the hope of reducing the likelihood of failure and the cost of equipment. However, to supply the same amount of power, the amperage must be greater than an equivalent 120v or 240v circuit, and greater amperage requires larger conductors and/or more energy to be lost as heat.

High voltage DC (380 volts) is finding use in some data center applications, and allows for small power conductors, but is subject to the more complex electrical code rules for safe containment of high voltages.[1]

Rotary UPS

A Rotary UPS uses the inertia of a high-mass spinning flywheel to provide short-term *ride-through* in the event of power loss. The flywheel also acts as a buffer against power spikes and sags, since such short-term power events are not able to appreciably affect the rotational speed of the high-mass flywheel. It is also one of the oldest designs, predating vacuum tubes and integrated circuits.

Typical protection time:

20 - 60 seconds

Capacity expansion:

Yes, several seconds

It can be considered to be *online* since it spins continuously under normal conditions. However, unlike an electronic double-conversion UPS, it is only capable of providing reserve power for a few seconds before the flywheel has slowed and the protection fails. It is traditionally used in conjunction with standby diesel generators, providing backup power only for the brief period of time the engine needs to start running and stabilize its output.

The Rotary UPS is generally reserved for applications needing more than 10,000 watts of protection, to justify the expense of an extremely large and heavy power system that can only be transported by forklift or crane. A larger flywheel or multiple flywheels operating in parallel will increase the reserve running time, but at greatly increasing cost due to the size and weight of the precision-balanced flywheels.

Because the flywheels are a mechanical power source, it is not necessary to use an electric motor or generator as an intermediary between it and a diesel engine designed to provide emergency power. By using a transmission gearbox, the rotational inertia of the flywheel can be used to directly start up a diesel engine, and once running, the diesel engine can be used to directly spin the flywheel. Multiple flywheels can likewise be connected in parallel through mechanical countershafts, without the need for separate motors and generators for each flywheel.

They are normally designed to provide very high amperage output compared to a purely electronic UPS, and are better able to provide inrush current for inductive loads such as motor startup or compressor loads, as well as medical MRI and cath lab equipment. It is also able to tolerate short-circuit conditions up 17 times larger than an electronic UPS, permitting one device to blow a fuse and fail while other devices still continue to be powered from the Rotary UPS.

Its life cycle is usually far greater than a purely electronic UPS, up to 30 years or more. But they do require periodic downtime for mechanical maintenance (ball bearing replacement), while solid-state designs, using batteries, do not require downtime if the batteries can be hot-swapped, which is usually the case for larger units.

Typically, the high-mass flywheel is used in conjunction with a motor-generator system. These units can be configured as:[2]

- 1. A motor driving a mechanically connected generator,
- 2. A combined synchronous motor and generator wound in alternating slots of a single rotor and stator,
- 3. A Hybrid Rotary UPS, designed similar to an Online UPS, except that it uses the flywheel in place of batteries. The rectifier drives a motor to spin the flywheel, while a generator uses the flywheel to power the inverter.

In case #3 the motor generator can be synchronous/synchronous or induction/synchronous. The motor side of the unit in case #2 and #3 can be driven directly by an AC power source (typically when in inverter bypass), a 6-step double-conversion motor drive, or a 6 pulse inverter. Case #1 uses an integrated flywheel as a short-term energy source instead of batteries to allow time for external, electrically coupled gensets to start and be brought online. Case #2 and #3 can use batteries or a free-standing electrically coupled flywheel as the short-term energy source.

UPS Applications

The basic technology of UPS hardware can have many forms when applied for different purposes. Any of the technologies may be recombined as redundant systems or designed for special needs.

EXHIBIT T

N+1 UPS

In large business environments where reliability is of great importance, a single huge UPS can also be a single point of failure that can disrupt many other systems. To provide greater reliability, multiple smaller UPS modules and batteries can be integrated together to provide redundant power protection equivalent to one very large UPS.

It is not normally possible to take the AC output of two separate UPS units and combine their output voltage, because the output waveform of one **UPS** inverter can be leading or lagging the other inverter, causing severe power fluctuations that can damage both the UPS units and the powered devices.

In an N+1 UPS, a special synchronization signal is shared amongst the inverter modules to assure that all are producing a sinewave output that is in synchrony, without leading or lagging waveforms. Additional monitoring circuits assure all inverters and batteries are operating correctly within tolerances.

Generally an N+1 UPS is designed to supply more power than is actually required by the load, so that in the event of a fault, at least one of the inverters or battery modules can be disabled and removed from powering the load. An internal crossbar bus can permit any battery module to be connected to any different inverter module, to bypass potential failures.

An N+1 UPS can permit easy, centralized expansion of enterprise load capacity. In contrast, by purchasing small separate UPS units, eventually the server room fills with a collection of many different UPS models with many different batteries all aging at different rates and needing lots of care and monitoring. Buying a single huge UPS means wasted capacity until it is full, and then another huge UPS must be added which again has wasted capacity. With the N+1 UPS, as capacity grows, expansion just requires purchasing additional inverter modules and battery modules, and adding them to the N+1 chassis.

Multiple, Redundant UPS

Many computer servers offer the option of redundant power supplies, so that in the event of one power supply failing, one or more other power supplies are able to power the load.

While it is common to plug each of these individual power supplies into one single UPS, redundant protection can be extended further yet by connecting each power supply to its own UPS. This provides double protection from both a power supply failure and a UPS failure, so that continued operation is assured.

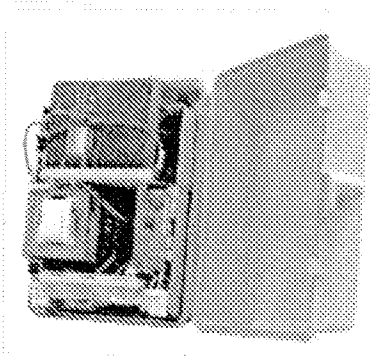
These additional layers of protection also add complexity and cost to the design of an enterprise server room environment. It also requires handling only by experienced professionals, since the multiple redundant cabling can appear confusing and unnecessary to an untrained person.

Outdoor UPS

When a UPS system is placed outdoors, it should have some specific features that guarantee that it can tolerate weather with a 'minimal to none' effect on performance. Factors such as temperature, humidity, rain, and snow among others should have been considered by the manufacturer when designing an outdoor UPS system. Operating temperature ranges for outdoor UPS systems could be around -40°C to +55° C.

An outdoor UPS system is normally made of several components designed for this particular task:

- Outdoor enclosure: provides protection against the elements to all the components placed within. Quality outdoor enclosures are powder coat finished for corrosion resistance and long life. Outdoor enclosures are normally NEMA 3R compliant
- Power Module: is the UPS itself. The boards of this power module should be conformal coated to avoid humidity damage. This UPS unit is normally based on Line Interactive or Double Conversion topology. Some manufacturers prefer Line Interactive because it provides a better Mean Time Between Failures (MTBF), and that is a critical part of an outdoor UPS system.
- Batteries: The batteries used in outdoor UPS systems must operate in a wide temperature range, usually from -40°C to +60°C. Batteries normally used in outdoor UPS systems are Gel Cell Batteries. The outdoor UPS's Power Module should provide a temperature compensated battery charging mechanism to optimize the life of the batteries.



A small outdoor UPS system.

A proper outdoor UPS system requires that all its components are designed for this environment. As seen from the features of the components above, an outdoor UPS system is not an indoor UPS inside an outdoor enclosure.

EXHIBIT T

Outdoor UPS systems can be pole, ground (pedestal), or host mounted. Outdoor environment could mean extreme cold, in which case the outdoor UPS system should include a battery heater mat, or extreme heat, in which case the outdoor UPS system should include a fan system or an air conditioning system.

Outdoor UPS systems are ideal for protection of WiFi/GSM/CDMA/satellite base stations, wireless communications/perimeter surveillance and security/gate control systems, LED traffic light/roadway display systems and remote terminal units (RTUs).

Internal-PC UPS

Internal UPS are a group of uninterruptible power supplies (UPS) designed to be placed inside computer chassis. There are two types of Internal UPS. First type is miniaturized regular UPS that are made small enough to fit into a 5.25" CD-ROM slot bay of a regular computer chassis. The other type is re-engineered switching power supplies that utilize dual power sources of AC and/or DC as power inputs and have an AC/DC built-in switching management control units.

The first type often requires extra connection wires between the internal UPS and computer's power supply. Some internal UPS of this group output high voltage (110 V - 220 V) direct current (DC) and some output nine-step table wave AC. Neither design is safe or energy efficient. As of 2006, there are only a couple of companies still selling this type of internal UPS in Australia, Asia and some part of Europe

The second group of internal UPS replaces the regular switching power supplies. There are three main design mechanisms:

1. Optic-coupling that imitates AC during AC outages. This mechanism was first introduced by American Advanced Power of USA and Magnum Power of UK in 1997, as well as Apollo Power of Taiwan in 1998. This design provides a low-cost solution but its efficiency is low and it has a very low overall wattage limit (<300 W).
2. An analog-circuitry-controlled AC/DC switching mechanism. This design also provides a low-cost solution. However, because of the bulky component circuit board, little space is available for increasing wattage output. Plus, the final products are very sensitive to factors such as local heat and causing frequent operational errors. Nevertheless, because of its low cost, it is still popular in China. Most Asian internal UPS manufacturers belong to this category.
3. A CPU controlled AC/DC switching mechanism. This design was first introduced by American Advanced Power Inc. of USA and Amsdell of Canada. It provides error-free switching control and a complicated communication protocol between the power supply and computer.

Disposing of UPS batteries

Many UPS units contain sealed lead-acid batteries and electronics which can be detrimental to the environment. In the United States, it is illegal to dispose of lead-acid batteries in a landfill, and they must be properly recycled. Sealed lead-acid batteries are recycled in the same manner as car batteries, so any auto shop that accepts used car batteries for recycling will also accept sealed lead acid batteries.

UPS Limitations

Using a generator with a UPS

Some types of UPS cannot function reliably with emergency power generators and the UPS will fail to work correctly with the generator power. Only a UPS that is specifically rated to work with a generator can be trusted to function properly.

Due to the limited output capacity of an emergency generator, it is common for the generator to produce temporary surges and dropouts as devices are turned on and off. These surges and dropouts become larger as the capacity of the emergency generator decreases compared to the total load it must supply.

For example, if a small business were powered by a 25 kilowatt standby generator, the engine would only run fast enough to provide a stable 50/60 Hz output sinewave for the currently operating loads. If a 5,000 watt water heater suddenly turns on, there is a temporary sag in voltage and a drop in frequency because the generator power draw is suddenly much higher than the engine output. The engine control detects the drop and opens the engine throttle to compensate, increasing engine RPM and bringing the voltage and frequency back up to normal. This stabilization may take a few seconds to occur if the sudden power draw is large, or the device is a motor and normally draws much more power for a few moments when starting as compared to stable running.

Similarly if a large load such as a water heater turns off, the load on the generator is suddenly much lower, and the voltage and frequency rises as the generator RPM quickly increases. The engine control again detects this increase and backs off the engine throttle to bring the generator back down to normal voltage and frequency.

A simple Standby UPS cannot deal with these surges and dropouts, and will constantly transfer to battery, which will quickly discharge and

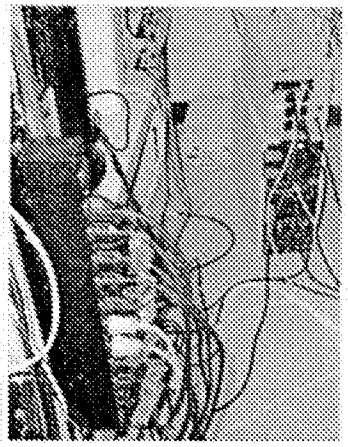
EXHIBIT T

cannot recharge quickly enough to compensate. A Line-Interactive UPS will have fewer problems but may still run down the battery due to the droupots. An Online or Double-Conversion UPS is potentially capable of handling these variations, but only if the power supply is designed to tolerate the wide ranging frequency and voltage variations.

Note that these frequency and voltage variations occur normally as a part of standard powerline generation. However the overall size of the distributed electrical grid and the huge capacity of generation stations help to buffer these surges and dropouts so the effects are not as severe as for a system running on emergency generators.

Power strip surge-protection hazard

For the basic Standby and Line-Interactive UPS, there is an often-unmentioned difficulty with adding additional power connections. Many UPS models only include a few closely-spaced outlets that cannot accommodate large power bricks or a large number of low-wattage devices all with separate power cables.



An American Power Conversion 10-outlet rackmount PDU without built-in surge protection, connected to an APC Smart UPS 2200 (bottom unit on right)

While a generic power strip *without surge protection* can be used to add additional room to the surge-protected outlets, a power strip with surge protection can interact badly with the UPS cutover switch and cause severe damage to the UPS. When the UPS switches from line power to battery and then back to line power, the cutover occurs so quickly that it can appear to be a power surge to a power strip plugged into the UPS. Most surge protection is sacrificial, in that the protection devices will create a temporary direct-short to create an alternate path for the surge to follow, and over time the protection eventually fails from stress.

How false surge triggering occurs

False triggering can occur because the inverter is usually not synchronized with the line current, and it is possible for a switchover to occur where the inverter has just reached the bottom of a negative voltage sine curve and the line current is reaching the exact top of a positive voltage sine curve (or vice-versa).

120v AC is an averaged Root Mean Square number, and has an actual peak near 170 volts. During the bypass switch cutover in this worst-case scenario, the voltage suddenly swings from -170v to +170v in 4 millisconds, which appears to the surge protection to be a sudden 340-volt swing and has all the appearance of being a voltage spike that should be suppressed. For a 240v UPS, this worst case switchover results in a sudden 650v voltage swing.

If the surge protection false-triggers, the surge protection suddenly overloads the UPS by several magnitudes beyond its design limits, and can result in the UPS electronics quickly overheating and burning up in seconds. Surge protection is generally only rated to handle brief spikes, but this sudden sustained high current absorption may result in the melting of the plastic power strip casing.

PDU: Commercial expansion options

When a UPS is used in a commercial environment such as powering rack-mount servers, it is not possible for the UPS to provide all the sockets necessary to support the protected loads. In this case the manufacturer will specifically provide an outlet-expansion option known as the Power Distribution Unit, or *PDU*. This is typically nothing more than common electrical receptacles and a long power cord in a steel case, with no surge protection at all, but with a high cost due to its special design for rackmount infrastructure. Surge protection is unnecessary in the PDU, since the UPS itself is already designed to provide surge protection.

For large installations with over 30 amperes of output, the UPS may have the option to be wired directly to standard electrical conduit and receptacles, using flex conduit to attach the UPS to the permanent conduit, again avoiding potential surge interaction problems.

Equipment damage policy limitations

For UPS models with equipment damage insurance policies, the policy is typically valid only if all protected devices were connected directly to the UPS, or if the customer purchases a company-brand PDU or company-brand power strip, as specified in the warranty policy.

Battery Monitoring Limitations

It is typically difficult to determine the charge capacity of an aging battery, using only simple voltage tests. Capacity declines as a battery ages and the lead plates begin to sulfate and decompose, but if a weak battery is sufficiently charged it will still be able to supply sufficient voltage to appear normal.

Only when the battery has been put under load for an extended period of time, and the battery amperage and voltage measured during the test, is it possible to find the true charge capacity. A weak battery will run properly for a few minutes or seconds and fail suddenly.

EXHIBIT T

A *Run-Time Calibration* is a special test that is rarely performed, and involves running down a fully-charged battery until it fails. The measured time and voltage/amperage results to create an estimated profile of projected battery life. This profile is how the estimated run-time is calculated based on current UPS wattage load.

However, the profile is rarely updated and becomes incorrect as the battery continues to age. More load testing is needed to verify capacity and update the run-time estimation, which is why some UPS models run a self test every few weeks, to do a quick battery capacity estimation.

Some UPS manufacturers suggest doing a Run-Time Calibration only once a year, because the deep discharging is harmful to the lead plates and accelerates their eventual failure. For longest life the charge should stay near 100% continuously, though without the occasional testing it is not possible to know the battery state at all.

For UPS models that rarely or never run self-tests, the battery life may have declined so severely from the profile that the UPS may fail within seconds of being activated. The UPS may appear to be perfectly normal until the critical moment it is needed, but in that moment as the protected devices suddenly turn off does the truth arise that the battery lost all its capacity weeks or months ago, and the UPS did not report any problems.

Nonstandard Sinewave Output

The Standby, Line-Interactive, and Online UPS products all contain an electronic inverter to generate alternating current from direct current. Since it is not a mechanical spinning rotor, they can only approximate a true sinousoidal wave. The less-expensive UPS models tend to generate a less-accurate approximation. The lowest cost UPS models tend to produce a very rough square-wave, mid-range UPS models produce a stepped-sine wave, while the highest quality models offer true sinewave output.

In many cases the protected equipment may appear to operate normally on the nonstandard waveforms, but over time may be damaged due to the harmonics of non-sinewave power causing excessive heating of transformers, AC motor windings, and power supply circuitry, for which the protected device was not designed to tolerate.

Run-Time Capacity Expansion

The least expensive UPS models, and the UPS models built for a specific purpose, are usually not capable of accepting additional battery packs or larger battery packs for extended power protection. To keep the manufacturing costs down, they frequently have no cooling fan, little or no venting for air circulation, and do not provide any form of battery or inverter temperature monitoring. Instead, to prevent overheating, their inverters are designed to only operate as long as the internal battery capacity allows and then shut down before the UPS overheating becomes excessive.

See also

- Emergency power system
- Power conditioner
- Surge protector

Notes

1. ^ Microsoft Word - DCDemoFinalReportFinalJan17-07.doc
2. ^ Hybrid Rotary UPS white paper

References

- *Part of this article was originally taken from a public-domain entry in Federal Standard 1037C.*
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External links

- How a UPS works
- The Do-It-Yourself-UPS

EXHIBIT T

EXHIBIT T

ups

4 entries found.

UPS
up[4,noun]
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Main Entry: **UPS**
Function: *abbreviation*

uninterruptible power supply

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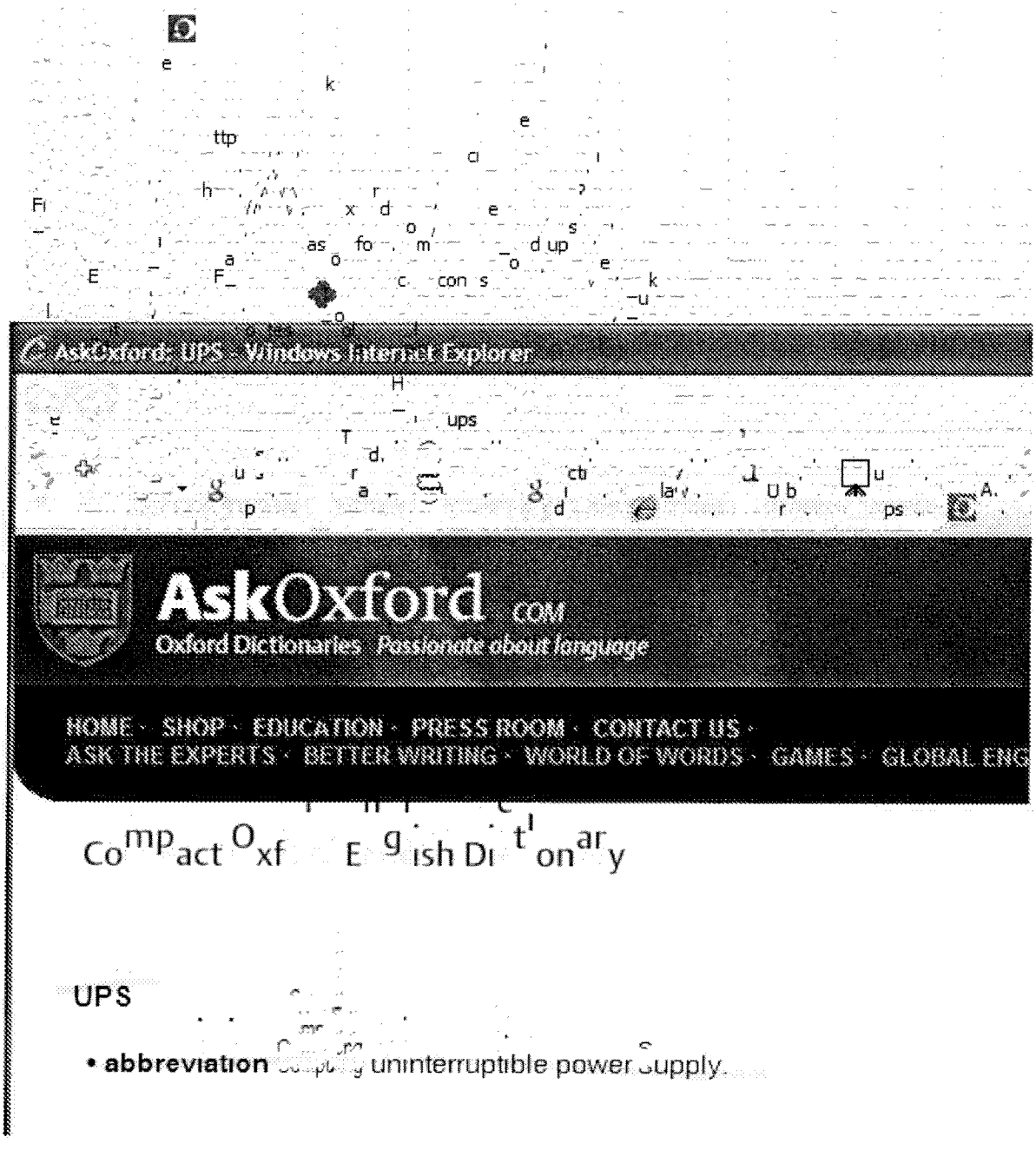
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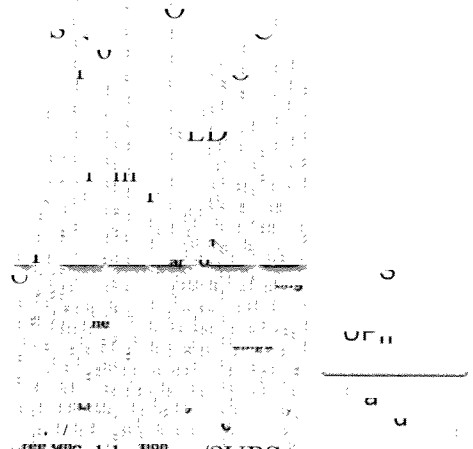

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YourDictionary.com
The last word in words

UPS

Telecom Definition

UPS definition

UPS

noun

SERVICE MARK FOR United Parcel Service

UPS (Uninterruptible Power Supply) telecom definition

A device or system that provides electrical power without interruption in the event that commercial power drops to an unacceptable voltage level. A UPS comprises circuitry and batteries that may provide power just long enough to shut down a computer or other system gracefully, without loss of data, or perhaps for many hours of normal operation in the event of a catastrophic commercial power failure. A typical UPS system operates in a hot standby, or offline, mode, continuously charging its batteries from a commercial power source and constantly prepared to assume responsibility within a few milliseconds for powering the client system. A more expensive online UPS actively filters commercial power, running it through the battery packs and an inverter, smoothing out the electrical waveforms and correcting for any power spikes and dips. See also inverter and waveform.

Browse dictionary entries near *UPS*

‹ uprouse
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‹ uprising
‹ uprise
‹ upright piano
‹ upright bass
‹ upright

ups and downs ›
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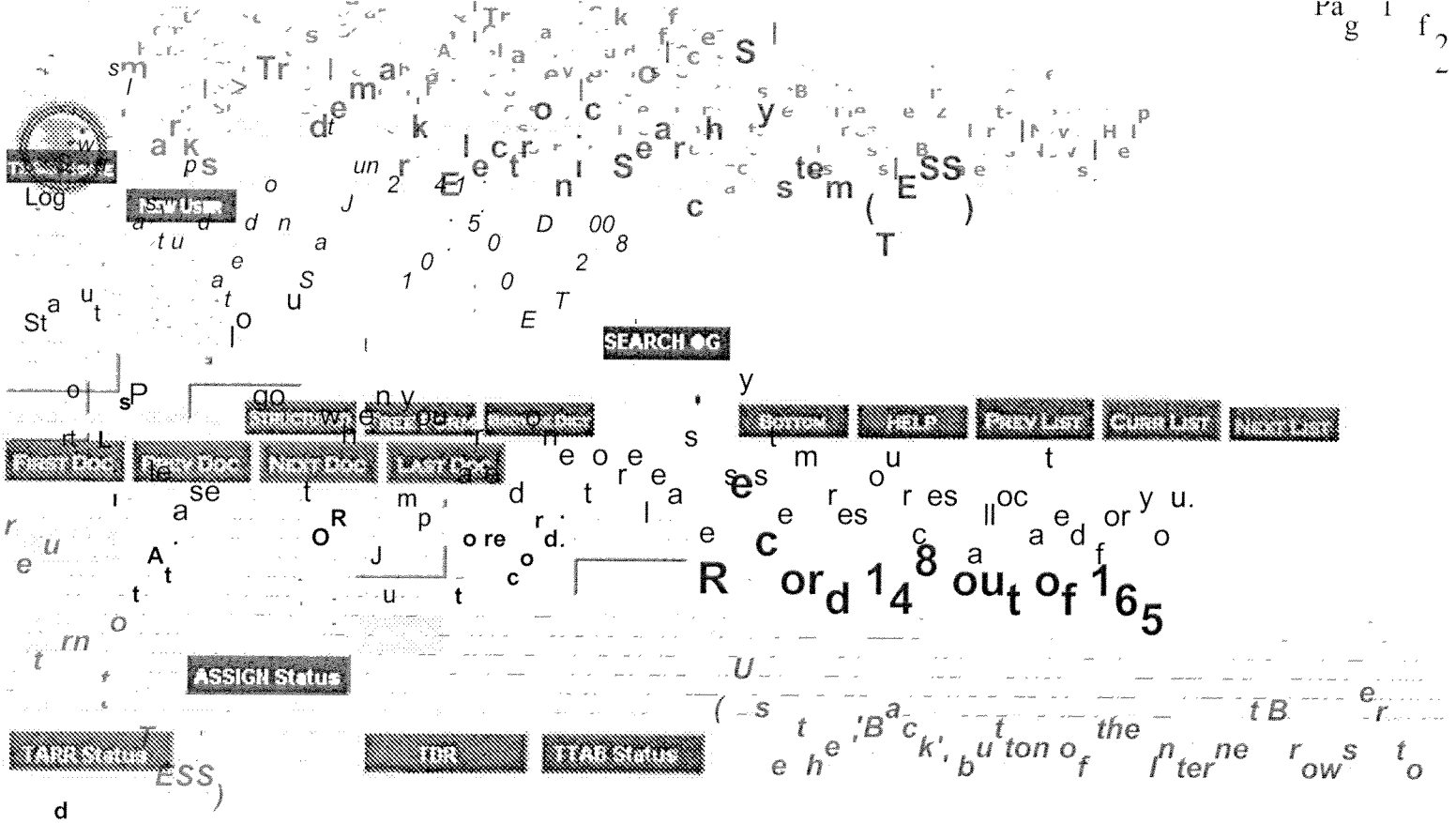

Smart-UPS

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Word Mark UPS

Goods and Services IC 009. ... electric ... power supplies ... uninterruptible power supplies ... FIRST USE: 19... IN COMMERCE: 19...

Mark Drawing Code

Serial Number

Filing Date

Published for Opposition

Registration Number

Registration Date

Owner ... CORPORATION DELAWARE 320 W. Cary Ave San Gabriel ... CALIFORNIA 91776

(LAST LISTED OWNER) ... CORPORATION BY ASSIGNMENT DELAWARE 5106 ... AZUSA CALIFORNIA 9170...

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Word Mark: SEA URCHIN

Goods and Services: IC 009. US 021 023 026 036 038. G & S: Underwater diving equipment, namely, diving masks, diving suits, diving gloves, diving boots, diving fins, diving hoods, diving regulators, diving weights, diving belts, diving knives, diving tanks, diving tank valves, diving tank straps, diving tank boots, diving tank backpacks, diving tank harnesses, diving tank wings, diving tank fittings, diving tank accessories, diving tank repair kits, diving tank maintenance kits, diving tank inspection kits, diving tank testing kits, diving tank refurbishment kits, diving tank recertification kits, diving tank hydrostatic testing kits, diving tank visual inspection kits, diving tank pressure testing kits, diving tank leak testing kits, diving tank corrosion testing kits, diving tank ultrasonic testing kits, diving tank eddy current testing kits, diving tank magnetic particle testing kits, diving tank liquid penetrant testing kits, diving tank radiographic testing kits, diving tank acoustic emission testing kits, diving tank thermography testing kits, diving tank shearography testing kits, diving tank holography testing kits, diving tank interferometry testing kits, diving tank speckle pattern interferometry testing kits, diving tank digital image correlation testing kits, diving tank moiré interferometry testing kits, diving tank grid method testing kits, diving tank coherent gradient sensing testing kits, diving tank photoelasticity testing kits, diving tank birefringence testing kits, diving tank polarimetry testing kits, diving tank scatterplate interferometry testing kits, diving tank shadow moiré testing kits, diving tank projection moiré testing kits, diving tank reflection moiré testing kits, diving tank geometric moiré testing kits, diving tank phase-shifting moiré testing kits, diving tank fringe projection testing kits, diving tank structured light testing kits, diving tank laser triangulation testing kits, diving tank time-of-flight testing kits, diving tank stereo vision testing kits, diving tank photogrammetry testing kits, diving tank laser scanning testing kits, diving tank white light scanning testing kits, diving tank blue light scanning testing kits, diving tank infrared scanning testing kits, diving tank ultraviolet scanning testing kits, diving tank X-ray scanning testing kits, diving tank gamma ray scanning testing kits, diving tank neutron radiography testing kits, diving tank computed tomography testing kits, diving tank magnetic resonance imaging testing kits, diving tank positron emission tomography testing kits, diving tank single-photon emission computed tomography testing kits, diving tank ultrasound testing kits, diving tank acoustic microscopy testing kits, diving tank scanning acoustic microscopy testing kits, diving tank laser ultrasonic testing kits, diving tank electromagnetic acoustic transducer testing kits, diving tank air-coupled ultrasonic testing kits, diving tank immersion ultrasonic testing kits, diving tank contact ultrasonic testing kits, diving tank dry-coupled ultrasonic testing kits, diving tank phased array ultrasonic testing kits, diving tank time-of-flight diffraction ultrasonic testing kits, diving tank guided wave ultrasonic testing kits, diving tank Lamb wave ultrasonic testing kits, diving tank Rayleigh wave ultrasonic testing kits, diving tank shear wave ultrasonic testing kits, diving tank longitudinal wave ultrasonic testing kits, diving tank surface wave ultrasonic testing kits, diving tank Stoneley wave ultrasonic testing kits, diving tank Scholte wave ultrasonic testing kits, diving tank Love wave ultrasonic testing kits, diving tank Rayleigh-Lamb wave ultrasonic testing kits, diving tank Rayleigh-Scholte wave ultrasonic testing kits, diving tank Rayleigh-Love wave ultrasonic testing kits, diving tank Lamb-Scholte wave ultrasonic testing kits, diving tank Lamb-Love wave ultrasonic testing kits, diving tank Scholte-Love wave ultrasonic testing kits, diving tank Rayleigh-Lamb-Scholte wave ultrasonic testing kits, diving tank Rayleigh-Lamb-Love wave ultrasonic testing kits, diving tank Rayleigh-Scholte-Love wave ultrasonic testing kits, diving tank Lamb-Scholte-Love wave ultrasonic testing kits, diving tank Rayleigh-Lamb-Scholte-Love wave ultrasonic testing kits

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Mark Drawing Code: (4) STANDARD CHARACTER MARK

Serial Number: 78597501

Filing Basis: 1(a)

Published for Opposition: Tuesday, May 6, 2008

Owner: (APPLICANT) Sea Urchin Diving Equipment, Inc. CORPORATION RHODE ISLAND 1234 Ocean Boulevard Westerly RHODE ISLAND 02892

Attorney of Record: Stephen James Richardson

Prior Registrations: 1234567; 2345678

Type of Mark: TRADEMARK

Register: PRINCIPAL

Live/Dead Indicator: LIVE

Abandonment Info: Abandoned - Failure to Respond or After Final Action Or Response or Petition Filed

Amended Register Date: 20030516

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Owner: [illegible] CORPORATION MASSACHUSETTS [illegible]

Attorney of Record: [illegible]

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Register: PRINCIPAL

Affidavit Text: [illegible]

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Extreme UPS

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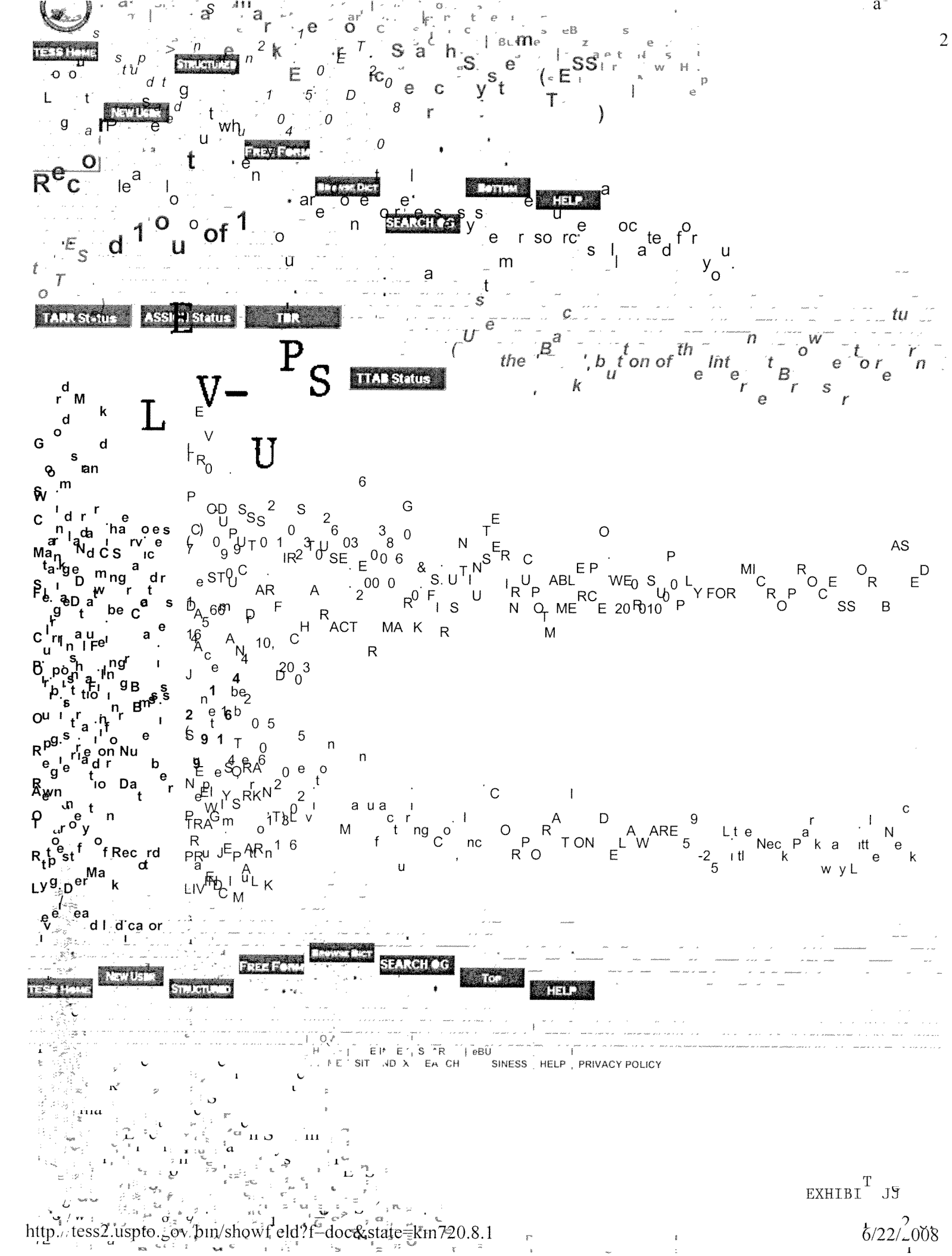

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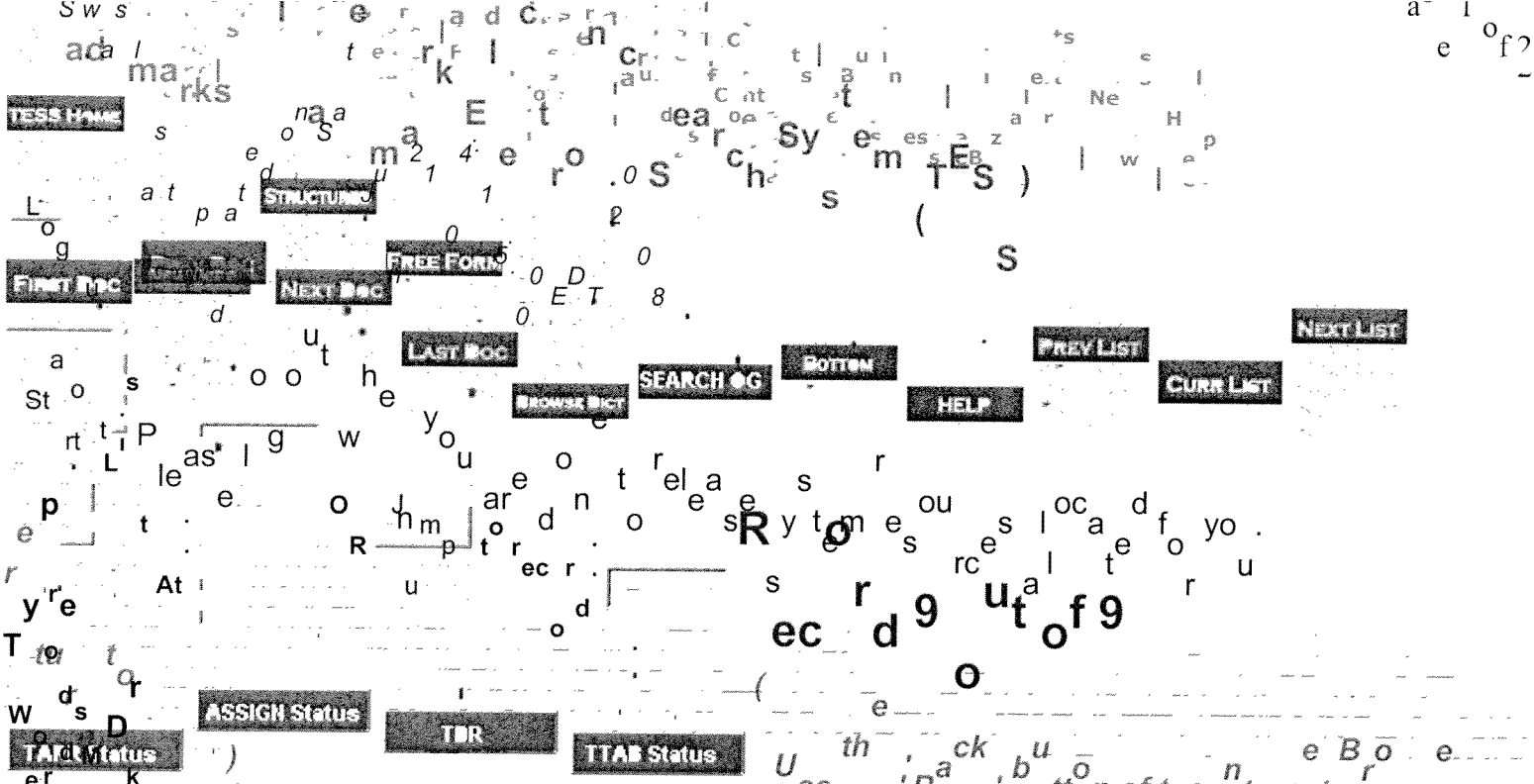
Mark Drawing Code	(5) WORDS, LETTERS, AND/OR NUMBERS ...
Design Search Code	...
Serial Number	...
Filing Date	...
Current Filing Basis	1A
Original Filing Basis	1A
Published for Opposition	July 29, 1997
Registration Number	2176830
Registration Date	... 1997
Owner	(REGISTRANT) American Power Conversion Corporation CORPORATION MASSACHUSETTS 132 Fairgrounds ... West Kingston RHODE ISLAND 02892
Attorney of Record	STEVEN J. HOLMES
Prior Registrations	1689901;1921639;...
Type of Mark	TRADEMARK

EXHIBIT MM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